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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Xiao-Fan Feng

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10/06/2008

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EXAMINER

KAU, STEVEN Y

ART UNIT

PAPER NUMBER

2625

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DELIVERY MODE

10/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/645,952	Applicant(s) FENG ET AL.	
	Examiner STEVEN KAU	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment was received on 6/25/2008, and has been entered and made of record. Currently, claims 1-22 are pending with claims 1-13 and 19 withdrawn and claims 14-18 and 20-22 to be continued for examination.

Terminal Disclaimer

2. Applicant filed a terminal disclaimer has been approved on 8/1/2008. Thus double patenting rejection has been overcome.

Response to Remark/Arguments

3. Applicant's arguments with respect to claims 14-18 and 20-22 have been fully considered and the reply to the Remarks/Arguments are in the following:

Applicant's arguments with respect to drawing objection have been fully considered and are persuasive. The objection to the drawing has been withdrawn from the record.

Applicant's arguments, "Claim Rejections Under 35 U.S.C. § 101", Page 12, Remarks, with respect to claim 22 has been fully considered. Claim 22 has been

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amended to satisfy the statutory requirements of 35 U.S.C. § 101. The rejection of claim 22 under 35 U.S.C. § 101 has been withdrawn from the record.

Applicant's arguments, "Claim Rejections Under 35 U.S.C. § 112, second paragraph", Page 11, Remarks, with respect to claim 21 has been fully considered but are not persuasive.

Applicant argues, "Claim 21 has been amended to correct the reference to a 'method' in this system claim. The examiner has also underlined the term 'designator ...' in citing this rejection. The term 'designator' is used to convey its ordinary meaning and is further described functionally by other elements in the claim. The designator of this claim may be implemented as a computer, television, computing device, filter, hardware, software or other implementations, however, the designator is qualified by the limitations that describe the way in which designator functions by dispersion of pixel values. Applicant believes the examiner has failed to consider the additional qualifications of this claim element in coming to the conclusion that this term does not distinctly claim the invention and requests reconsideration of this part of the rejection", Page 11 of Remark, (emphasis is added by the examiner).

The examiner respectfully disagrees with the argument. With respect to Claim 21, limitations recite, "A system for creating a spatio-temporal array of dither patterns, said system comprising: a. a spatio-temporal array of dither pattern tiles comprising a plurality of temporal framesets, each of said framesets comprising a plurality of pattern tiles for each of a plurality of color channels; and b. a designator for designating pixel values in said dither pattern tiles wherein subsequently-designated pixel values are

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spatially dispersed from previously-designated pixel values in the same dither pattern tile and dither pattern tiles in other color channels”, (emphasis added by the examiner). First, the examiner disagrees that “the designator is qualified by the limitations that describe the way in which designator functions by dispersion of pixel values”. The transition clause “wherein” in the claim limitation defines “said dither pattern tile” but not to qualifying “the designator” since a designator can designating any pixel values. More importantly, as required by the statutory basis of 35 U.S.C. § 112, second paragraph, recites, **“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention”**, thus, “The designator of this claim may be implemented as a computer, television, computing device, filter, hardware, software or other implementations” fails to “particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention” as required. Because of this reason, the rejection of claim 21 under 35 U.S.C. § 112, second paragraph still stands and the Examiner's position remains unchanged.

With regard to “rejection under 35 U.S.C. 103(a)”, pages 12-14, Remarks, applicant's arguments have been fully considered but they are not persuasive because the invention is found to be anticipated by a person skilled in the art in the time the invention was made. **For example**, Daly’ 961 discloses a method for creating a spatio-temporal array of dither patterns (**Fig. 8, Para. 35**), said method comprising:

- a. establishing a spatio-temporal array of dither pattern tiles comprising a plurality of temporal framesets (**Fig. 8 discloses spatio-temporal array of dither pattern tiles**

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comprising multiple temporal framesets, Para. 58), each of said framesets comprising a plurality of pattern tiles for each of a plurality of color channels (Figs. 4 and 5, discloses color channels for said framesets, Paras. 40-54); and

b. designating pixel values (e.g. **such frames 0-n in Frameset P each designating pixel values, Figs. 5 and 8**) in said dither pattern tiles wherein subsequently-designated pixel values are spatially dispersed from previously-designated pixel values in the same dither pattern tile and dither pattern tiles in other color channels (**dither patterns are repeated continuously across the image, either horizontally or vertically, and the final noise profile is combined with color channels image data, Figs. 5 and 8, Paras. 55-63**).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The examiner also references the applicant to the claims rejection section below for the explanation on how the prior art references read on the amended claims.

Claim Objections

4. Claim 22 is objected to because of the following informalities: with respect to claim 22, preamble recites, "A computer-readable medium comprising computer-executable instructions encoded in a computer program for creating a spatio-temporal array of dither patterns, said method comprising", (emphasis added by the examiner). There is no "method" defined in the preamble. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 22 is directed to a computer program medium comprising computer-executable instructions encoded in a computer program for creating a spatio-temporal array of dither patterns. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. With respect to claim 22, recites, “a computer-readable medium comprising computer-executable instructions encoded in a computer program for creating a spatio-temporal array of dither patterns, said method comprising:

- a. establishing a spatio-temporal array of dither pattern tiles comprising a plurality of temporal framesets, each of said framesets comprising a plurality of pattern tiles for each of a plurality of color channels; and
- b. designating pixel values in said dither pattern tiles wherein subsequently-designated pixel values are spatially dispersed from previously-designated pixel values in the same dither pattern tile and dither pattern tiles in other color channels”, (emphasis added). The original disclosure lack of information, i.e. “computer-executable instructions encoded in a computer program”, for enabling one to make and use the invention as claimed. Both computer hardware and software must be sufficiently disclosed (MPEP 2161.01).

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 21, recites, "A system for creating a spatio-temporal array of dither patterns, said method comprising: a. a spatio-temporal array of dither pattern tiles comprising a plurality of temporal framesets, each of said framesets comprising a plurality of pattern tiles for each of a plurality of color channels; and b. a designator for designating pixel values in said dither pattern tiles wherein subsequently-designated pixel values are spatially dispersed from previously-designated pixel values in the same dither pattern tile and dither pattern tiles in other color channels". Claim 21 is an independent system claim and there is no method as a "said method" in the claim. Applicant also failed to particularly point out "a designator for designating pixel value". Is the designator a computer, a television, a filter, a hardware device or a software module?

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 14, 15, 18, 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Daly (US 2003/0164961).

Regarding claim 14.

Daly' 961 discloses a method for creating a spatio-temporal array of dither patterns (**Fig. 8, Para. 35**), said method comprising:

a. establishing a spatio-temporal array of dither pattern tiles comprising a plurality of temporal framesets (**Fig. 8 discloses spatio-temporal array of dither pattern tiles comprising multiple temporal framesets, Para. 58**), each of said framesets comprising a plurality of pattern tiles for each of a plurality of color channels (**Figs. 4 and 5, discloses color channels for said framesets, Paras. 40-54**); and

b. designating pixel values (**e.g. such frames 0-n in Frameset P each designating pixel values, Figs. 5 and 8**) in said dither pattern tiles wherein subsequently-designated pixel values are spatially dispersed from previously-designated pixel values in the same dither pattern tile and dither pattern tiles in other color channels (**dither patterns are repeated continuously across the image, either horizontally or vertically, and the final noise profile is combined with color channels image data, Figs. 5 and 8, Paras. 55-63**).

Regarding claim 15, in accordance with claim 14.

Daly' 961 discloses that subsequently-designated pixel values are also dispersed from previously-designated pixel values in other temporal frames (**dither patterns are repeated continuously across the image, either horizontally or vertically, thus subsequently-designated pixel values are also dispersed from previously-designated pixel values in other temporal frames, Figs. 5 and 8, Paras. 55-63**).

Regarding claim 18, in accordance with claim 15.

Daly' 961 discloses pixel values designated in a last temporal frame are considered temporally adjacent to a first-designated frame wherein said pixel values in said first-designated frame have a dispersion effect on pixels designated in said last frame (**Fig. 8 discloses a embodiment that the last frame is temporally adjacent to the first frame and pixel values in said first-designated frame have a dispersion effect on pixels designated in said last frame because dither patterns are repeated continuously across the image, either horizontally or vertically, Figs. 5 and 8, Paras. 55-63**).

Regarding claim 21.

Daly' 961 discloses system for creating a spatio-temporal array of dither patterns, said system (**System of Fig. 5**) comprising:

a. a spatio-temporal array of dither pattern tiles comprising a plurality of temporal framesets (**Fig. 8 discloses spatio-temporal array of dither pattern tiles comprising multiple temporal framesets, Para. 58**), each of said framesets comprising a plurality of pattern tiles for each of a plurality of color channels (**Figs. 4 and 5, discloses color channels for said framesets, Paras. 40-54**); and

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b. a designator (**e.g. Framesets P and P+1 of Fig. 8**) for designating pixel values (**e.g. such frames 0-n in Frameset P each designating pixel values, Figs. 5 and 8**) in said dither pattern tiles wherein subsequently-designated pixel values are spatially dispersed from previously-designated pixel values in the same dither pattern tile and dither pattern tiles in other color channels (**dither patterns are repeated continuously across the image, either horizontally or vertically, and the final noise profile is combined with color channels image data, Figs. 5 and 8, Paras. 55-63**).

Regarding claim 22.

Claim 22 recites identical features as claim 14, except claim 22 is a computer-readable medium claim. Thus, arguments similar to that presented above for claim 14 are also equally applicable to claim 22.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daly (US 2003/0164961) as applied to claim 15, and in view of Lippel (US 4,758,893).

Regarding claim 16, in accordance with claim 15.

Daly' 961 does not explicitly disclose that other temporal frames is weighted.

Lippel' 893 discloses wherein said dispersion from pixel values in other temporal frames is weighted wherein temporal frames more temporally distant from a pixel value have a lower dispersion than closer temporal frames (e.g. **Lippel discloses weighted temporal frames for subcycling cinematic dither and therefore, temporal instant of temporal frames can be controlled, col 10, lines 13-24**).

Having a method of Daly' 961 reference and then given the well-established teaching of Lippel' 893 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Daly' 961 reference to include data conversion as taught by Lippel' 893 reference since doing so would be able to control priority of color channels in the method for creating a spatio-temporal array of the dither patterns and further the services provided could easily be established for one another with predictable results.

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daly (US 2003/0164961) as applied to claim 15, and in view of Masuji et al (US 7,110,010).

Regarding claim 17, in accordance with claim 15.

Daly' 961 does not explicitly disclose that dispersion from pixel values in other color channels is weighted wherein other color channels have a lower dispersion than the color channel in which a pixel value is designated.

Masuji' 010 teaches that dispersion from pixel values in other color channels is weighted wherein other color channels have a lower dispersion than the color channel in which a pixel value is designated (**Masuji' 010 discloses that dither coefficient is**

weighted with color gradation level and dither coefficient is selected for dithering process, col 4, lines 23-39 and col 14, lines 17-33, and Fig. 17).

Having a method of Daly' 961 reference and then given the well-established teaching of Masuji' 010 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Daly' 961 reference to include data conversion as taught by Masuji' 010 reference since doing so would enhance the method for creating a spatio-temporal array of the dither patterns by selecting different weight level of dither coefficient to optimize dither coefficient patterns and further the services provided could easily be established for one another with predictable results.

Allowable Subject Matter

14. As stated in the previous office action, dated 3/18/2008, Claim 20 will be allowable if all other rejections are overcome. The primary reasons for allowance for claim 20 is the inclusion of the limitation of a method for creating a spatio-temporal array of dither patterns such (a). establishing an initial temporal offset frameset (ITOF), wherein said ITOF comprises a pre-determined pattern for each of a plurality of color channels; (b). establishing a first temporal frameset comprising dither pattern tiles for each of a plurality of color channels; (c). designating a first pixel value at a first point in a first dither pattern tile of said first temporal frameset, wherein said first point is dispersed from at least one pixel value in said pre-determined pattern; (d). designating a second pixel value at a second point in said first dither pattern tile of said first temporal

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frameset, wherein said second point is placed at a location that is dispersed away from at least one pixel value in said first dither pattern tile. It is these limitations either alone or combined as claimed that were taught, found, or suggested by prior art. The closest prior arts in the record are Lippel (US 4,758,893) and Gupta et al (Gupta) (US 6,851,783)

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Kau whose telephone number is 571-270-1120 and fax number is 571-270-2120. The examiner can normally be reached on M-F, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Steven Kau/
Examiner, Art Unit 2625
9/26/2008

/King Y. Poon/
Supervisory Patent Examiner, Art
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